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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/706,243A

DATE: 05/09/2002

TIME: 13:49:09

Input Set : A:\seqlist.txt

Output Set: N:\CRF3\05092002\I706243A.raw

3 <110> APPLICANT: Cox III, George N.
4 Case, Casey Christopher
5 Eisenberg, Stephen P.
6 Jarvis, Eric E.
7 Spratt, Sharon K.
9 <120> TITLE OF INVENTION: REGULATION OF ENDOGENOUS GENE EXPRESSION IN CELLS
10 USING ZINC FINGER PROTEINS
12 <130> FILE REFERENCE: 8325-0002.10 / S2-US3
14 <140> CURRENT APPLICATION NUMBER: 09/706,243A
15 <141> CURRENT FILING DATE: 2000-11-03
17 <160> NUMBER OF SEQ. ID NOS: 43
19 <170> SOFTWARE: PatentIn Ver. 2.0
21 <210> SEQ ID NO: 1
22 <211> LENGTH: 25
23 <212> TYPE: PRT
24 <213> ORGANISM: Artificial Sequence
26 <220> FEATURE:
27 <223> OTHER INFORMATION: Description of Artificial Sequence:exemplary motif
28 of C2H2 class of zinc finger proteins (ZFP)
30 <220> FEATURE:
31 <221> NAME/KEY: MOD_RES
32 <222> LOCATION: (2)..(3)
33 <223> OTHER INFORMATION: Xaa = any amino acid
35 <220> FEATURE:
36 <221> NAME/KEY: MOD_RES
37 <222> LOCATION: (4)..(5)
38 <223> OTHER INFORMATION: Xaa = any amino acid, may be present or absent
40 <220> FEATURE:
41 <221> NAME/KEY: MOD_RES
42 <222> LOCATION: (7)..(18)
43 <223> OTHER INFORMATION: Xaa = any amino acid
45 <220> FEATURE:
46 <221> NAME/KEY: MOD_RES
47 <222> LOCATION: (20)..(22)
48 <223> OTHER INFORMATION: Xaa = any amino acid
50 <220> FEATURE:
51 <221> NAME/KEY: MOD_RES
52 <222> LOCATION: (23)..(24)
53 <223> OTHER INFORMATION: Xaa = any amino acid, may be present or absent
55 <400> SEQUENCE: 1
W--> 56 Cys Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
57 1 5 10 15
W--> 59 Xaa Xaa His Xaa Xaa Xaa Xaa Xaa His

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```

60          20          25
61 <210> SEQ ID NO: 2
62 <211> LENGTH: 10
63 <212> TYPE: DNA
64 <213> ORGANISM: Artificial Sequence
66 <220> FEATURE:
67 <223> OTHER INFORMATION: Description of Artificial Sequence:ZFP target site
68     with two overlapping D-able subsites
70 <220> FEATURE:
71 <221> NAME/KEY: modified_base
72 <222> LOCATION: (1)..(2)
73 <223> OTHER INFORMATION: n = g,a,c or t
75 <220> FEATURE:
76 <221> NAME/KEY: modified_base
77 <222> LOCATION: (5)
78 <223> OTHER INFORMATION: n = g,a,c or t
80 <220> FEATURE:
81 <221> NAME/KEY: modified_base
82 <222> LOCATION: (8)
83 <223> OTHER INFORMATION: n = g,a,c or t
85 <220> FEATURE:
86 <221> NAME/KEY: modified_base
87 <222> LOCATION: (9)
88 <223> OTHER INFORMATION: n = a,c or t; if g, then position 10 cannot be g
89     or t
91 <220> FEATURE:
92 <221> NAME/KEY: modified_base
93 <222> LOCATION: (10)
94 <223> OTHER INFORMATION: n = a or c; if g or t, then position 9 cannot be g
96 <400> SEQUENCE: 2
W--> 97 nngknngknnn          10
100 <210> SEQ ID NO: 3
101 <211> LENGTH: 10
102 <212> TYPE: DNA
103 <213> ORGANISM: Artificial Sequence
105 <220> FEATURE:
106 <223> OTHER INFORMATION: Description of Artificial Sequence:ZFP target site
107     with three overlapping D-able subsites
109 <220> FEATURE:
110 <221> NAME/KEY: modified_base
111 <222> LOCATION: (1)..(2)
112 <223> OTHER INFORMATION: n = g,a,c or t
114 <220> FEATURE:
115 <221> NAME/KEY: modified_base
116 <222> LOCATION: (5)
117 <223> OTHER INFORMATION: n = g,a,c or t
120 <220> FEATURE:
121 <221> NAME/KEY: modified_base
122 <222> LOCATION: (8)

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123 <223> OTHER INFORMATION: n = g,a,c or t
125 <400> SEQUENCE: 3
W--> 126 nngkngkngk 10
129 <210> SEQ ID NO: 4
130 <211> LENGTH: 5
131 <212> TYPE: PRT
132 <213> ORGANISM: Artificial Sequence
134 <220> FEATURE:
135 <223> OTHER INFORMATION: Description of Artificial Sequence:linker
137 <400> SEQUENCE: 4
138 Asp Gly Gly Gly Ser
139 1 5
142 <210> SEQ ID NO: 5
143 <211> LENGTH: 5
144 <212> TYPE: PRT
145 <213> ORGANISM: Artificial Sequence
147 <220> FEATURE:
148 <223> OTHER INFORMATION: Description of Artificial Sequence:linker
150 <400> SEQUENCE: 5
151 Thr Gly Glu Lys Pro
152 1 5
155 <210> SEQ ID NO: 6
156 <211> LENGTH: 9
157 <212> TYPE: PRT
158 <213> ORGANISM: Artificial Sequence
160 <220> FEATURE:
161 <223> OTHER INFORMATION: Description of Artificial Sequence:linker
163 <400> SEQUENCE: 6
164 Leu Arg Gln Lys Asp Gly Glu Arg Pro
165 1 5
168 <210> SEQ ID NO: 7
169 <211> LENGTH: 4
170 <212> TYPE: PRT
171 <213> ORGANISM: Artificial Sequence
173 <220> FEATURE:
174 <223> OTHER INFORMATION: Description of Artificial Sequence:linker
176 <400> SEQUENCE: 7
177 Gly Gly Arg Arg
178 1
181 <210> SEQ ID NO: 8
182 <211> LENGTH: 5
183 <212> TYPE: PRT
184 <213> ORGANISM: Artificial Sequence
186 <220> FEATURE:
187 <223> OTHER INFORMATION: Description of Artificial Sequence:linker
189 <400> SEQUENCE: 8
190 Gly Gly Gly Gly Ser
191 1 5
194 <210> SEQ ID NO: 9

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195 <211> LENGTH: 8
196 <212> TYPE: PRT
197 <213> ORGANISM: Artificial Sequence
199 <220> FEATURE:
200 <223> OTHER INFORMATION: Description of Artificial Sequence:linker
202 <400> SEQUENCE: 9
203 Gly Gly Arg Arg Gly Gly Gly Ser
204   1           5
207 <210> SEQ ID NO: 10
208 <211> LENGTH: 9
209 <212> TYPE: PRT
210 <213> ORGANISM: Artificial Sequence
212 <220> FEATURE:
213 <223> OTHER INFORMATION: Description of Artificial Sequence:linker
215 <400> SEQUENCE: 10
216 Leu Arg Gln Arg Asp Gly Glu Arg Pro
217   1           5
220 <210> SEQ ID NO: 11
221 <211> LENGTH: 12
222 <212> TYPE: PRT
223 <213> ORGANISM: Artificial Sequence
225 <220> FEATURE:
226 <223> OTHER INFORMATION: Description of Artificial Sequence:linker
228 <400> SEQUENCE: 11
229 Leu Arg Gln Lys Asp Gly Gly Gly Ser Glu Arg Pro
230   1           5           10
233 <210> SEQ ID NO: 12
234 <211> LENGTH: 16
235 <212> TYPE: PRT
236 <213> ORGANISM: Artificial Sequence
238 <220> FEATURE:
239 <223> OTHER INFORMATION: Description of Artificial Sequence:linker
242 <400> SEQUENCE: 12
243 Leu Arg Gln Lys Asp Gly Gly Gly Ser Gly Gly Gly Ser Glu Arg Pro
244   1           5           10           15
247 <210> SEQ ID NO: 13
248 <211> LENGTH: 25
249 <212> TYPE: DNA
250 <213> ORGANISM: Artificial Sequence
252 <220> FEATURE:
253 <223> OTHER INFORMATION: Description of Artificial Sequence:ZFP target site
254     region surrounding initiation site of vascular
255     endothelial growth factor (VEGF) gene containing
256     two 9-base pair target sites
258 <220> FEATURE:
259 <221> NAME/KEY: protein_bind
260 <222> LOCATION: (4)..(12)
261 <223> OTHER INFORMATION: upstream 9-base pair ZFP VEGF1 target site
263 <220> FEATURE:

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```

264 <221> NAME/KEY: protein_bind
265 <222> LOCATION: (14)..(22)
266 <223> OTHER INFORMATION: downstream 9-base pair ZFP VEGF3a target site
268 <400> SEQUENCE: 13
269 agcggggagg atcgcgagg cttgg                                     25
272 <210> SEQ ID NO: 14
273 <211> LENGTH: 298
274 <212> TYPE: DNA
275 <213> ORGANISM: Artificial Sequence
277 <220> FEATURE:
278 <223> OTHER INFORMATION: Description of Artificial Sequence:VEGF1 ZFP
279     construct targeting upstream 9-base pair target
280     site in VEGF promoter
282 <220> FEATURE:
283 <221> NAME/KEY: CDS
284 <222> LOCATION: (2)..(298)
285 <223> OTHER INFORMATION: VEGF1
287 <400> SEQUENCE: 14
288 g gta ccc ata cct ggc aag aag aag cag cac atc tgc cac atc cag ggc 49
289   Val Pro Ile Pro Gly Lys Lys Lys Gln His Ile Cys His Ile Gln Gly
290     1           5           10           15
292 tgt ggt aaa gtt tac ggc aca acc tca aat ctg cgt cgt cac ctg cgc   97
293 Cys Gly Lys Val Tyr Gly Thr Thr Ser Asn Leu Arg Arg His Leu Arg
294           20           25           30
296 tgg cac acc ggc gag agg cct ttc atg tgt acc tgg tcc tac tgt ggt   145
297 Trp His Thr Gly Glu Arg Pro Phe Met Cys Thr Trp Ser Tyr Cys Gly
298           35           40           45
300 aaa cgc ttc acc cgt tgc tca aac ctg cag cgt cac aag cgt acc cac   193
301 Lys Arg Phe Thr Arg Ser Ser Asn Leu Gln Arg His Lys Arg Thr His
302           50           55           60
303 acc ggt gag aag aaa ttt gct tgc ccg gag tgt ccg aag cgc ttc atg   241
304 Thr Gly Glu Lys Lys Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe Met
305           65           70           75           80
307 cgt agt gac cac ctg tcc cgt cac atc aag acc cac cag aat aag aag   289
308 Arg Ser Asp His Leu Ser Arg His Ile Lys Thr His Gln Asn Lys Lys
309           85           90           95
311 ggt gga tcc                                     298
312 Gly Gly Ser
315 <210> SEQ ID NO: 15
316 <211> LENGTH: 99
317 <212> TYPE: PRT
318 <213> ORGANISM: Artificial Sequence
320 <220> FEATURE:
321 <223> OTHER INFORMATION: Description of Artificial Sequence:VEGF1 ZFP
322     construct targeting upstream 9-base pair target
323     site in VEGF promoter
325 <400> SEQUENCE: 15
326 Val Pro Ile Pro Gly Lys Lys Lys Gln His Ile Cys His Ile Gln Gly
327   1           5           10           15

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RAW SEQUENCE LISTING ERROR SUMMARY
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; Xaa Pos. 2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,20,21,22,23,24
Seq#:2; N Pos. 1,2,5,8,9,10
Seq#:3; N Pos. 1,2,5,8
Seq#:41; N Pos. 1,2
Seq#:42; N Pos. 1,2
Seq#:43; N Pos. 1,2

VARIABLE LOCATION SUMMARY

DATE: 05/09/2002

PATENT APPLICATION: US/09/706,243A

TIME: 13:49:10

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Use of n's or Xaa's (NEW RULES):

Use of n's and/or Xaa's have been detected in the Sequence Listing.

Use of <220> to <223> is MANDATORY if n's or Xaa's are present.

in <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents.

Seq#:1; Xaa Pos. 2,3,4,5,7,8,9,10,11,12,13,14,15,16,17,18,20,21,22,23,24

Seq#:2; N Pos. 1,2,5,8,9,10

Seq#:3; N Pos. 1,2,5,8

Seq#:41; N Pos. 1,2

Seq#:42; N Pos. 1,2

Seq#:43; N Pos. 1,2

VERIFICATION SUMMARY

DATE: 05/09/2002

PATENT APPLICATION: US/09/706,243A

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Input Set : A:\seqlist.txt

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L:56 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
L:59 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:16
L:97 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0
L:126 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:0
L:861 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:41
L:861 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:41
L:861 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41 after pos.:0
L:873 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:42
L:873 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:42
L:873 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:42 after pos.:0
L:885 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:43
L:885 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:43
L:885 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:43 after pos.:0